REMARKS

Applicant submits that the present amendment is intended to be fully responsive to the Office Action having a mailing date of August 11, 2004. In response to the Office Action, Applicant has amended the claims for the purpose of putting the application in condition for allowance. Applicant submits that no new matter has been added by this amendment and that support for the amended claims may be found throughout the application as originally filed.

Remarks Directed To Rejections Under 35 U.S.C. §102(b)

Claims 1-8 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,845,006 ("Sumi et al.").

The claimed invention provides a method of tracing the motion of a three-dimensional object based on the stereo image of the object obtained in a time series. The method includes: an inputting step for inputting a stereographic image frame of the object concerned; a selecting step for selecting tracing points on a three-dimensional object model corresponding to the silhouette of the object concerned in the inputted image frame based on the present position of the object concerned; a sampling step for sampling points on the silhouette of the object in the image frame corresponding to respective tracing points on the three-dimensional object model; a measuring step for measuring the three-dimensional coordinates of the sampled corresponding points; and a detecting step for detecting the position/posture of the object from the three-dimensional coordinates of those respective tracing points and respective corresponding points and for detecting a detection error, wherein if the detected error is not small enough, the three-dimensional motion of aforesaid object is traced by continuously repeating each process from the selecting step through the detecting step toward each frame of the stereo image obtained in time series, or if the detected error is small enough, the three-dimensional motion of the aforesaid

object is traced by continuously repeating each process from the inputting step through the detecting step toward each frame of the stereo image obtained in time series. (Claim 1).

Claims 1 and 5, the only independent claims in the application, have been carefully amended to further define Applicant's invention. More specifically, claims 1 and 5 now include "an inputting step for inputting a stereographic image frame of the object concerned." Additionally, claims 1 and 5 include a judging step, wherein if a detected error is not small enough, the three-dimensional motion of the object is traced by continuously repeating each process from the selecting step through the detecting step toward each frame of the stereo image obtained in time series, or if the detected error is small enough, the three-dimensional motion of the aforesaid object is traced by continuously repeating each process from the inputting step through the detecting step toward each frame of the stereo image obtained in time series. Applicant submits that neither the inputting step nor the judging step are disclosed in Sumi et al. Sumi et al. does not include each and every element of claims 1 and 5 and, therefore, does not anticipate claims 1 and 5.

Additionally, Sumi et al. does not teach, suggest or provide motivation to include the aforementioned inputting and judging steps as part of the object motion tracing method. Applicant submits, therefore, that it would not be obvious to one having ordinary skill in the art to incorporate the claimed inputting and judging steps in light of Sumi et al.

Accordingly, Applicant respectfully requests withdrawal of the anticipation rejection of claims 1 and 5 under 35 U.S.C. §102(b) by Sumi et al. Applicant requests withdrawal of the anticipation rejection of claims 2-4 and 6-8 under 35 U.S.C. §102(b) by Sumi et al. on the basis of dependency from allowable base claims 1 and 5.
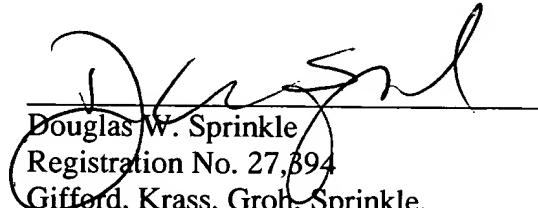
Claim 9 has been added to define an object motion tracing method for tracing the three-dimensional motion of an object having an arbitrarily curved and smooth surface, based on the stereo image of the object concerned obtained in time series, composed of: "a selecting step for selecting tracing points corresponding to the silhouette of the object concerned in the stereo image of the object, wherein the rigid body motion parameters of an object between frames of inputted images in time series and the form of the silhouette varying every moment are estimated simultaneously; a sampling step for sampling from the above-mentioned stereo image the corresponding points on the silhouette of the object corresponding to respective tracing points; a measuring step for measuring the three-dimensional coordinates of the sampled corresponding points; and a detecting step for detecting the position/posture of the object from the three-dimensional coordinates of those respective tracing points and respective corresponding points, wherein the three-dimensional motion of aforesaid object is traced by continuously repeating each process from the selecting step through the detecting one toward each frame of the stereo image obtained in time series."

It should be noted that claim 9 includes all of the elements as defined in claim 1 prior to this amendment, but adds to the selecting step the limitation that "the rigid body motion parameters of an object between frames of inputted images in time series and the form of the silhouette varying every moment are estimated simultaneously." Applicant submits that Sumi et al. does not disclose a selecting step, "wherein the rigid body motion parameters of an object between frames of inputted images in time series and the form of the silhouette varying every moment are estimated·simultaneously." Sumi et al. does not include each and every element of claims 9 and, therefore, does not anticipate the method as defined in claim 9. Further, it is submitted that simultaneously estimating both the rigid body motion parameteres of an object

between frames of inputted images in time series and the form of the silhouette varying every moment is not taught or suggested in Sumi et al. As such, Applicant respectfully submits that claim 9 patentably defines over Sumi et al.

From the foregoing amendments and remarks, Applicant believes that the claims of the present application embody patentable subject matter and are in condition for allowance. As such, Applicant respectfully requests that such action toward these ends be taken.

Respectfully submitted,

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